

Emergency Management Competency 2.1

Competency 2.1 Emergency management personnel shall demonstrate an expert level knowledge of the following emergency management related Department of Energy (DOE) Orders:

- DOE Order 5500.1, Emergency Management System
- DOE Order 5500.2, Emergency Categories, Classes, and Notification and Reporting Requirements
- DOE Order 5500.3, Planning and Preparedness for Operational Emergencies
- DOE Order 5500.7, Emergency Operating Records Protection Program
- DOE Order 5500.10, Emergency Readiness Assurance Program

1. Supporting Knowledge and Skills

- a. Describe the purpose of the Orders listed above.
- b. Discuss the general roles and responsibilities of the departmental elements for management of the Department's Emergency Management System.
- c. Define "Operational Emergencies" and the circumstances to which they apply.
- d. Discuss the classes of hazards contained in DOE Order 5500.1, Emergency Management System.
- e. Discuss the Department's three-tiered organizational approach to managing Operational Emergencies.
- f. Review and comment on appropriate plans and procedures for timely and accurate determination of emergency class, notification and reporting of emergency events.
- g. Using DOE Order 5500.3, Planning and Preparedness for Operational Emergencies, Section 8, Policy, discuss the stated policy.
- h. Discuss the concept of "commensurate with hazard" stated in DOE Order 5500.3, Planning and Preparedness for Operational Emergencies.

Emergency Management Competency 2.1

- i. Using the Requirements Section of DOE Order 5500.3, Planning and Preparedness for Operational Emergencies, and the applicable Department of Energy Emergency Management Guide, discuss the purpose and function of each of the following required program elements:
- Emergency response organization
 - Off-site response interfaces
 - Operational Emergency Event Classes
 - Notification
 - Consequence assessment
 - Protective actions
 - Medical support
 - Recovery and reentry
 - Public information
 - Emergency facilities and equipment
 - Training
 - Drills and exercises
 - Program administration
- j. State the purpose of an Emergency Readiness Assurance Plan.

2. Self-Study Activities (corresponding to the intent of the above competency)

Below are two web sites containing many of the references you may need.

Web Sites		
Organization	Site Location	Notes
Department of Energy	http://wastenot.inel.gov/cted/stdguido.html	DOE Standards, Guides, and Orders
U.S. House of Representatives	http://law.house.gov/cfr.htm	Searchable Code of Federal Regulations

Read DOE Order 5500.1, *Emergency Management System*.

Read DOE Order 5500.2, *Emergency Categories, Classes, and Notification and Reporting Requirements*.

Read DOE Order 5500.3, *Planning and Preparedness for Operational Emergencies*.

Read DOE Order 5500.7, *Emergency Operating Records Protection Program*.

Emergency Management Competency 2.1

Read DOE Order 5500.10, *Emergency Readiness Assurance Program*.

- EXERCISE 2.1-A Referring to the Orders listed above, identify the purpose and scope statements.
- EXERCISE 2.1-B Identify the role of the field element in an emergency.
- EXERCISE 2.1-C Describe the organization and function of the Headquarters (HQ) emergency management team (EMT).
- EXERCISE 2.1-D Define the term “operational emergency” and the circumstances to which it applies.
- EXERCISE 2.1-E Describe the membership and function of the Emergency Management Advisory Committee (EMAC).
- EXERCISE 2.1-F The establishment of an emergency operations center (EOC) is found in which DOE Order?
- EXERCISE 2.1-G Describe each of the following DOE response assets and identify the field element responsible for maintaining/deploying each asset:
- Accident Response Group (ARG)
 - Federal Radiological Monitoring and Assessment Center (FRMAC)
 - Radiological Assistance Program (RAP)
 - Radiation Emergency Assistance Center/Training Site (REAC/TS)
 - Nuclear Emergency Search Team (NEST)
 - Aerial Measuring System (AMS)
 - Atmospheric Release Advisory Capability (ARAC)
- EXERCISE 2.1-H Describe the function of the DOE Regional Coordinating Offices.
- EXERCISE 2.1-I Describe the approval process for emergency plans and procedures for DOE- or contractor-operated DOE facilities.
- EXERCISE 2.1-J Describe three classes of operational emergencies.
- EXERCISE 2.1-K Describe the role of the field element in a general emergency.
- EXERCISE 2.1-L Describe the relationship between DOE Orders 5500.2B and 5000.3B.

Emergency Management Competency 2.1

Read DOE Order 5500.3, *Planning and Preparedness for Operational Emergencies*.

- EXERCISE 2.1-M Discuss the concept “commensurate with hazard” stated in DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*.
- EXERCISE 2.1-N Referring to the Requirements section of DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, and the applicable DOE Emergency Management Guide, briefly describe each of the following required program elements:
- Emergency response organization
 - Off-site response interfaces
 - Operational emergency event classes
 - Notification
 - Consequence assessment
 - Protective actions
 - Medical support
 - Recovery and reentry
 - Public information
 - Emergency facilities and equipment
 - Training
 - Drills and exercises
 - Program administration
- EXERCISE 2.1-O Discuss the need for DOE Order 5500.7B, *Emergency Operating Records Protection Program*, in light of the existence of DOE Order 1324.8, *Rights and Interests Records Protection Program* (otherwise known as the Vital Records Program).
- EXERCISE 2.1-P Using DOE Order 5500.10, describe the role of the field element in the Emergency Readiness Assurance Program.
- EXERCISE 2.1-Q Identify the dates for submission of Emergency Readiness Assurance Plans (1) from the contractor to the field element and (2) from the field element to the Program Secretarial Officer.

Emergency Management Competency 2.1

3. Summary

It is the purpose of DOE Orders to establish a framework for the Department's EMS.

DOE Order 5500.1B, *Emergency Management System*, establishes the overall policy and requirements of the EMS. The Order states that the Under Secretary is the senior official for the EMS and convenes the HQ EMT. The HQ EMT is a team formed to manage response actions during emergencies involving DOE facilities or requiring DOE assistance. The EMAC is also established by this Order and supports the Director of Emergency Operations (DEO) in the development of specific policy and technical recommendations. Specific responsibilities are spelled out in this Order for Facility Managers, heads of field elements, and HQ Program Secretarial Officers (Program Senior Officials [PSOs]).

DOE Order 5500.2B, *Emergency Categories, Classes, and Notification and Reporting Requirements*, establishes standard terminology for operational and energy emergencies. Operational emergencies are further classified as an Alert, a Site Area Emergency, or General Emergency according to the severity of the impact of the event. This Order also establishes a reporting requirement for emergency events.

DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, establishes the hazards assessment as the technical basis upon which all emergency management programs are developed. The Order states the requirements for planning and preparedness for operational emergencies and describes the 13 program elements of an emergency management program.

DOE Order 5500.7B, *Emergency Operating Records Protection Program*, establishes policies, responsibilities, and requirements to ensure the safeguarding of the core of records deemed necessary to ensure continuity of governmental activities following disasters and attack-related emergency conditions. The Order provides regulatory guidance on acceptable storage locations, manner of storage, and disposition of emergency operating records.

DOE Order 5500.10, *Emergency Preparedness Assurance Program*, establishes requirements for the Emergency Readiness Assurance Program, the goal of which is to ensure that the EMS is ready to respond promptly, efficiently, and effectively to any emergency involving DOE facilities or requiring DOE assistance. The program includes a requirement for development of a five-year ERAP. The Order requires an appraisal program to ensure that stated emergency capabilities are sufficient to implement emergency plans and that appropriate and timely improvements are made.

Emergency Management Competency 2.1

4. Exercise Solutions

EXERCISE 2.1-A Referring to the Orders listed above, identify the purpose and scope statements.

ANSWER 2.1-A

Purpose and Scope of Selected DOE Orders Related to Emergency Management		
Order	Purpose	Scope
5500.1B <i>Emergency Management System</i>	To establish overall policy and requirements for the Department of Energy (DOE) Emergency Management System (EMS). The EMS provides the framework for development, coordination, and direction of planning, preparedness, and readiness assurance activities. This Order addresses responses to Operational, Energy, and Continuity of Government (COG) Emergencies involving DOE or requiring DOE assistance.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.
5500.2B <i>Emergency Categories, Classes, and Notification and Reporting Requirements</i>	To establish Department of Energy (DOE) emergency categories, classes, and notification and reporting requirements to facilitate the communication and reporting of emergency events.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.
5500.3A <i>Planning and Preparedness for Operational Emergencies</i>	To establish requirements for planning and preparedness for Operational Emergencies involving the Department of Energy (DOE) or requiring DOE assistance.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.

Emergency Management Competency 2.1

Purpose and Scope of Selected DOE Orders Related to Emergency Management		
Order	Purpose	Scope
5500.7B <i>Emergency Operating Records Protection Program</i>	To establish the policy, responsibilities, and requirements for a Departmental Emergency Operating Records Protection Program to safeguard that core of records deemed necessary to assure continuity of essential Governmental activities during and following disaster and attack-related emergency conditions.	The provisions of this Order apply to all Departmental elements and to covered contractors to the extent implemented under a contract or other agreement. A covered contractor is a seller of supplies or services involving the management of an emergency operations center under a management and operating contract or subcontracts thereunder.
5500.10 <i>Emergency Readiness Assurance Program</i>	To establish the requirements of the Emergency Readiness Assurance Program with a goal of assuring that the Department of Energy (DOE) Emergency Management System (EMS) is ready to respond promptly, efficiently, and effectively to any emergency involving DOE facilities or requiring DOE assistance.	The provisions of this Order apply to all DOE Elements and contractors performing work for DOE as provided for by law and/or contract and as implemented by the appropriate contracting officer.

EXERCISE 2.1-B Identify the role of the field element in an operational emergency.

ANSWER 2.1-B During an operational emergency, the cognizant field element is responsible for the following:

1. Ensuring prompt initial notification to state, tribal, and local governments and others, as appropriate
2. Ensuring proper response by Facility Managers to any emergency within their facilities
3. Providing additional technical assistance and support
4. Monitoring the facility response activities and recommending additional actions, as necessary
5. Predesignating an On-Scene Coordinator for Federal responses under the National Contingency Plan (NCP)

Emergency Management Competency 2.1

6. Ensuring emergency response actions are coordinated with the cognizant local, state, tribal, and Federal regional organizations
7. Coordinating additional DOE and other Federal agency resources, as required
8. Overseeing the local investigation and closeout of the occurrence, in accordance with the HQ Program Manager

EXERCISE 2.1-C Describe the organization and function of the EMT at the HQ level.

ANSWER 2.1-C The HQ EMT consists of an executive team and a technical operations cadre. The executive team provides strategic direction to the response and evaluates the broad impacts of the emergency on the DOE complex. The executive team is normally chaired by the Under Secretary, with the cognizant PSO serving as the Deputy Chair.

The technical operations cadre, which consists of several designated PSOs for nuclear and nonnuclear programs, provides oversight to the field element; coordinates with other Federal agencies; and provides information to the press, Congress, and other Federal agencies.

EXERCISE 2.1-D Define the term “operational emergency.”

ANSWER 2.1-D Operational emergencies are significant accidents, incidents, events, or natural phenomena that seriously degrade the safety or security of DOE facilities. Operational emergencies apply to DOE reactors and other DOE facilities (nuclear and nonnuclear) involved with hazardous materials; DOE-controlled nuclear weapons, components, or test devices; DOE safeguards and security events; and transportation accidents involving hazardous materials.

EXERCISE 2.1-E Describe the membership and the function of the EMAC.

ANSWER 2.1-E The EMAC, chaired by the DEO, consists of individuals with emergency preparedness responsibilities, appointed by and representing the cognizant HQ PSOs and heads of field elements.

Emergency Management Competency 2.1

The functions of the EMAC are to assist the DEO in the identification of problem areas related to the DOE EMS, provide recommended solutions to such problems, and assist with the development of policy and technical recommendations to enhance and implement the DOE emergency preparedness program.

EXERCISE 2.1-F The requirement for establishment of EOCs is found in which DOE Order?

ANSWER 2.1-F The requirement for the establishment of EOCs is found in DOE Order 5500.3A, Section 11c(10) subsection (a) and (b).

EXERCISE 2.1-G Describe each of the following DOE response assets and identify the field element responsible for maintaining/deploying each asset:

- ARG
- FRMAC
- RAP
- REAC/TS
- NEST
- AMS
- ARAC

ANSWER 2.1-G

DOE Emergency Response Assets		
Asset	Description	Responsible Field Element
Accident Response Group (ARG)	Primary accident response element for events or accidents involving nuclear weapons.	Albuquerque Operations Office
Federal Radiological Monitoring and Assessment Center (FRMAC)	Center established for production of compiled, quality-controlled monitoring and assessment data for the lead Federal agency and the state, tribal, or local authorities involved in a radiological event.	Nevada Operations Office

Emergency Management Competency 2.1

DOE Emergency Response Assets		
Asset	Description	Responsible Field Element
Radiological Assistance Program (RAP)	Provides radiological assistance to other Federal agencies, state, tribal, and local governments, and nuclear regulatory licensees requesting assistance for events involving radioactive materials.	Appropriate Regional Coordinating Offices
Radiation Emergency Assistance Center/Training Site (REAC/TS)	Provides 24-hour direct or consultative assistance regarding medical and health physics problems associated with radiation accidents.	Oak Ridge Operations Office
Nuclear Emergency Search Team (NEST)	Provides technical assistance to the Federal Bureau of Investigation, including locating nuclear or explosive materials or devices that may be lost, stolen, or associated with bomb threats.	Nevada Operations Office
Aerial Measuring System (AMS)	Measures extremely low levels of gamma radiation and locates and tracks airborne radiation. This system also includes aerial photography and multispectral scanning capabilities.	Nevada Operations Office
Atmospheric Release Advisory Capability (ARAC)	Computer-based emergency response and preparedness system that provides rapid predictions of the transport, diffusion, and deposition of radionuclides or other toxic materials released into the atmosphere and dose projections to people and the environment.	Oakland Operations Office

Emergency Management Competency 2.1

EXERCISE 2.1-H List the DOE Regional Coordinating Offices and describe their function.

ANSWER 2.1-H Regional Coordinating Offices include the following:

- Operations Offices at Oak Ridge
- Savannah River
- Albuquerque
- Chicago
- Idaho
- Richland
- Oakland
- Brookhaven Area Office

The function of the Regional Coordinating Offices is to provide assistance and support within their assigned regions as required under the Radiological Assistance Program in coordination with and based on guidance from DP-1.

EXERCISE 2.1-I Describe the approval process for emergency plans and procedures for DOE or contractor-operated DOE facilities.

ANSWER 2.1-I Emergency plans and procedures are developed at the facility/site level by the managing contractor with approval from the cognizant field element and PSO.

EXERCISE 2.1-J Describe three classes of operational emergencies.

ANSWER 2.1-J

The Three Classes of Operational Emergencies	
Class	Description
Alert	An Alert represents an event in progress or having occurred that involves an actual or potential substantial reduction in the level of facility safety and protection. Any environmental releases of hazardous materials are expected to be limited to small fractions of the appropriate Protective Action Guidelines (PAGs) or Emergency Response Planning Guidelines (ERPGs) on site.

Emergency Management Competency 2.1

The Three Classes of Operational Emergencies	
Class	Description
Site Area Emergency	A Site Area Emergency represents an event that is in progress or has occurred involving actual or likely major failure(s) of facility safety or safeguards systems needed for the protection of on-site personnel, public health and safety, the environment, or national security. Any environmental releases of hazardous materials are not expected to exceed the appropriate PAGs off site.
General Emergency	A General Emergency represents an event that is in progress or has occurred involving actual or imminent catastrophic failure of facility safety systems with potential for loss of confinement integrity of a weapon or test device, which could lead to substantial off-site impacts. Any release of hazardous materials can reasonably be expected to exceed the appropriate PAGs off site.

EXERCISE 2.1-K Describe the activities associated with declaration of an operational General Emergency.

ANSWER 2.1-K Declaration of a General Emergency requires the notification, mobilization, and dispatch of all appropriate emergency response personnel and equipment, including appropriate DOE national response assets to do the following:

1. Activate the response centers and other emergency assets to provide continuous assessment of information
2. Establish communication, consultation, and liaison with off-site authorities and recommend predetermined protective actions for the public
3. Provide information to the public through off-site authorities and the media
4. Conduct or assist evacuations and sheltering
5. Conduct appropriate assessments, investigations, or sampling and monitoring
6. Mitigate the severity of the actual or potential consequences
7. Mobilize and dispatch appropriate response groups or security forces

Emergency Management Competency 2.1

EXERCISE 2.1-L Describe the relationship between DOE Orders 5500.2B and 5000.3B.

ANSWER 2.1-L DOE Order 5000.3B provides requirements for reporting event occurrences. Reportable events are categorized as Off-Normal, Unusual Events, and Emergencies. Once an event has been determined to be an Emergency, it is further classified as to Alert, Site Area, or General Emergency by 5500.2B.

EXERCISE 2.1-M Discuss the concept “commensurate with hazard” stated in DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*.

ANSWER 2.1-M “Commensurate with hazard” provides a mechanism for a graded approach to planning, preparedness, and response. Planning and preparedness activities should reflect the severity of hazards associated with a facility/site. Emergency preparedness programs for low-hazard facilities should be appropriate for the low hazards on site. A high-hazard facility would require a greater level of planning and preparedness.

EXERCISE 2.1-N Referring to the Requirements section of DOE Order 5500.3A, *Planning and Preparedness for Operational Emergencies*, and the applicable DOE Emergency Management Guide, briefly describe each of the following required program elements:

- Emergency response organization
- Off-site response interfaces
- Operational emergency event classes
- Notification
- Consequence assessment
- Protective actions
- Medical support
- Recovery and reentry
- Public information
- Emergency facilities and equipment
- Training
- Drills and exercises
- Program administration

Emergency Management Competency 2.1

ANSWER 2.1-N

Required Emergency Preparedness Program Elements	
Program Element	Description
Emergency response organization	Has overall responsibility for the initial and ongoing response to, and mitigation of, an emergency.
Off-site response interfaces	Provisions for interface and coordination with Federal, state, tribal, and local agencies and organizations responsible for off-site emergency response and for protection of the environment and the health and safety of the public.
Operational emergency event classes	Alert, Site Area, and General Emergency classes indicate the level of severity of an emergency event.
Notification	Provisions for notification and communication of emergency information (must be consistent with the requirements of DOE Orders 5000.3B and 5500.2B).
Consequence assessment	Provisions to adequately assess the actual or potential on-site and off-site consequences of an emergency.
Protective actions	Specific, predetermined actions to be taken in response to emergency conditions to protect on-site personnel and the public.
Medical support	Medical support for workers, including those with radiological and/or hazardous materials contamination.
Recovery and reentry	Plans and procedures for recovery from an operational emergency and reentry into the affected facility.
Public information	To ensure timely release of accurate information regarding an emergency to the news media and the coordination of this information within DOE and with other Federal, state, tribal, and local response organizations.
Emergency facilities and equipment	An EOC from which the emergency response organization assesses, evaluates, coordinates, and directs emergency response activities and communicates within DOE and with other Federal, state, tribal, and local response organizations. This program element also includes additional facilities, commensurate with the scope and characteristics of response activities.

Emergency Management Competency 2.1

Required Emergency Preparedness Program Elements	
Program Element	Description
Training	The purpose of a training program is to ensure training is provided to all workers regarding operational emergencies, and specialized training is conducted for all members of the response organization. Facility-specific training and information on hazards and emergency response must also be provided to off-site state, tribal, and local emergency response organizations.
Drills and exercises	Drills and exercises are used to develop, maintain, test and evaluate personnel skills, expertise, and response capability.
Program administration	Ensures the development and maintenance of the emergency plan, the ERAP and annual updates, development and conduct of training and exercise programs, coordination of assessment activities, development of related documentation, and coordination of emergency response.

EXERCISE 2.1-O Discuss the need for DOE Order 5500.7B, *Emergency Operating Records Protection Program*, in light of the existence of DOE Order 1324.8, *Rights and Interests Records Protection Program* (otherwise known as the Vital Records Program).

ANSWER 2.1-O DOE Order 5500.7B specifically addresses the protection of operating records necessary to maintain operations in the event of a disaster or attack-related emergency that threatens the continuity of government operations.

EXERCISE 2.1-P Using DOE Order 5500.10, describe the role of the field element in the Emergency Readiness Assurance Program.

ANSWER 2.1-P Heads of field elements are responsible for the following:

1. Review and approval of ERAPs and updates from subordinate elements
2. Consolidate ERAPs and annual updates and submit them to the appropriate PSO for final approval
3. Provide the resources required to implement field element emergency readiness assurance activities in accordance with approved ERAPs

Emergency Management Competency 2.1

4. Monitor and evaluate emergency readiness assurance capabilities within their areas of responsibility, including safeguards and security issues; conduct field performance reviews and assessments to ensure that contractor emergency readiness programs are valid
5. Review contractor compliance with appropriate DOE requirements, legislation, and implementing regulations
6. Act as the Federal On Scene Coordinator for contractor response under the National Oil and Hazardous Substances Pollution Contingency Plan
7. Ensure that the Manager/Administrator of each DOE- or contractor-operated facility does the following:
 - a) Performs internal EMS readiness assurance assessments of the facility
 - b) Prepares the ERAPs and annual updates required by DOE Order 5500.10

EXERCISE 2.1-Q Identify the dates for submission of ERAPs (1) from the contractor to the field element, and (2) from the field element to the Program Secretarial Officer.

ANSWER 2.1-Q

1. Facility ERAPs are due to the field element by September 30.
2. Consolidated field element ERAPs are due to the PSO by October 31.